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10/810,282	03/26/2004	Richard L. Parton	87152AEK	8579

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EXAMINER

YAMNITZKY, MARIE ROSE

ART UNIT PAPER NUMBER

1774

DATE MAILED: 10/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/810,282

Applicant(s)

PARTON ET AL.

Examiner

Marie R. Yamnitzky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>rec'd 26 Mar 2004</u> . | 6) <input type="checkbox"/> Other: _____  |

1. Regarding claim interpretation:

The examiner interprets "sterically bulky substituent" (as recited, e.g., in the last line of claim 1) in light of the specification (page 4, lines 20-21). However, given that present claims 1, 15 and 21 allow both of p and w to be 0, the sterically bulky substituent is an optional substituent for all claims that do not explicitly limit at least one of p and w to 1-3 and/or do not positively recite that the compound has at least one such substituent.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3-5, 21, 26, 27, 30, 32 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Enokida et al. (US 5,759,444).

For example, see column 1, lines 10-30, c. 2, l. 4-8, c. 4, l. 24-47, c. 26, l. 38-62, the formula for compound A-15 in Table 2 (c. 31-32), and c. 41, l. 41-51.

Compound A-15 as represented by the formula in Table 2 is a naphthalene compound represented by Formula (1) as defined in present claim 1 wherein each of p, w, m and n is 0.

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Regarding present claim 3, Ar<sup>a</sup> is not present when each of m and n is 0.

Regarding present claims 4 and 5, the sterically bulky substituent represented by R<sup>1</sup> and/or R<sup>2</sup> is not present when each of p and w is 0.

Compound A-15 further meets the limitations of a naphthalene compound represented by Formula (4) as defined in present claim 21 wherein each of p and w is 0.

4. Claims 1-4, 6-11, 21, 22, 24-27, 30, 32 and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsuura et al. (US 2005/0064233 A1).

See the whole publication. In particular, see paragraphs [0021]-[0046] and the formulae designated EM80, EM81, EM83, EM84, EM127, EM128, EM129, EM130, EM161, EM183, EM184 and EM192 on pages 19, 20, 26, 31, 35 and 37.

The compounds represented by formulae EM80, EM81, EM83 and EM84 are naphthalene compounds represented by Formula (1) as defined in present claim 1 wherein each of p, w, m and n is 0. These compounds further meet the limitations of a compound represented by Formula (4) as defined in present claim 21 wherein each of p and w is 0.

The compounds represented by formulae EM127, EM128, EM129, EM130 and EM192 are naphthalene compounds represented by Formula (1) as defined in claim 1 wherein each of p and w is 1, each of m and n is 0, and each of R<sup>1</sup> and R<sup>2</sup> is a sterically bulky substituent. These compounds further meet the limitations of a compound represented by Formula (4) as defined in claim 21 wherein each of p and w is 1.

The compound represented by formula EM161 is a naphthalene compound represented by Formula (1) as defined in claim 1 wherein each of p and w is 2, and each of m and n is 0, and further meets the limitations of the compound represented by Formula (4) as defined in claim 21.

The compounds represented by formula EM183 and EM184 are naphthalene compounds represented by Formula (1) as defined in claim 1 wherein one of p and w is 1 and the other is 2, and each of m and n is 0. The compounds further meet the limitations of the compound represented by Formula (4) as defined in claim 21.

The compounds represented by formulae EM127, EM128, EM129, EM130, EM161, EM183, EM184 and EM192 further meet the limitations of one or more dependent claims which further define the sterically bulky substituent. For example, the compound of formula EM128 as shown on page 26 of the prior art is a compound of present formula (1) wherein each of p and w is 1, and each of R<sup>1</sup> and R<sup>2</sup> is a t-butyl group. Per page 5 of the present specification, a t-butyl group (*t*-C<sub>4</sub>H<sub>9</sub>) has a Sterimol B<sub>1</sub> value of 2.59 angstroms. Accordingly, prior art compounds such as the compound of formula EM128 meet the limitations of the naphthalene compound as defined in present claim 1 and further defined in present claims 2-4, 6-11, 21, 22, 24 and 25.

Regarding present claim 3, Ar<sup>a</sup> is not present when each of m and n is 0.

5. Claims 1, 3-5, 15, 21, 26-30, 32 and 33 are rejected under 35 U.S.C. 102(a) and 35 U.S.C. 102(e) as being anticipated by Parton et al. (US 2003/0129449 A1).

See the whole publication. In particular, see paragraphs [0009]-[0050], [0053], [0056], [0057], [0107] and [0146].

Of the compounds represented by the formulae in paragraph [0049], all *except* Inv-6, Inv-10, Inv-11, Inv-12, Inv-31 and Inv-32 meet the limitations of a compound represented by Formula (1) as defined in present claim 1 wherein each of p and w is 0, and a compound represented by Formula (4) as defined in present claim 4 wherein each of p and w is 0.

Of the compounds represented by the formulae in paragraph [0049], Inv-16 through Inv-20, Inv-24 through Inv-30 and Inv-33 are within the scope of the compound required by present claim 3 when each of m and n is 1 or 2. Several other compounds depicted in paragraph [0049] are within the scope of the compound required by claim 3 when one of m and n is 0 and the other of m and n is 1.

Of the compounds represented by the formulae in paragraph [0049], Inv-16 through Inv-20, Inv-24 through Inv-30 and Inv-33 also meet the limitations of a compound represented by Formula (3) as defined in present claim 15 wherein each of p and w is 0.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 28, 29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enokida et al. (US 5,759,444) as applied to claims 1, 3-5, 21, 26, 27, 30, 32 and 33 above, and for the further reasons set forth below.

Enokida et al. teach that the light-emitting layer may utilize a combination of materials, and that some doping materials may be used to shift the color of light. For example, see c. 25, l. 38-c. 26, l. 2 and c. 41, l. 41-51.

Enokida et al. teach fluorescent materials while claim 28 requires triplet light emitting materials (phosphorescent materials). Triplet light emitting materials as required by claim 28 were known in the art at the time of the present invention to be usable in the light-emitting layer of an electroluminescent device, and known to provide advantages over fluorescent materials (advantages such as greater device efficiency).

Polymeric light emitting materials as required by claim 29 were also known in the art at the time of the invention. Fluorescent polymeric light emitters as well as phosphorescent polymeric light emitters were known in the art at the time of the invention.

Further, it was well known in the art at the time of the invention that white light could be produced by selecting an appropriate combination of different light emitting materials to be combined in one layer, or an appropriate combination of different light emitting layers to be stacked upon one another.

It would have been an obvious modification to one of ordinary skill in the art at the time of the invention to utilize Enokida's Compound A-15 in various electroluminescent device structures known in the art, and to incorporate other materials known in the art to be suitable for use in an electroluminescent device.

8. Claims 1-27, 30, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura et al. (US 2005/0064233 A1) as applied to claims 1-4, 6-11, 21, 22, 24-27, 30, 32 and 33 above, and for the further reasons set forth below.

With respect to claim embodiments requiring a sterically bulky substituent that is an aryl group with a substituent alpha to the point of attachment to the naphthalene compound, such as the substituent represented by present Formula (2b), Matsuura et al. teach that substituted aryl groups may be utilized as substituents. For example, see paragraphs [0023]-[0042]. 2-methylphenyl is explicitly taught in paragraph [0031]. 2-methylphenyl is a group of present formula (2b) in which "i" is 0 and S<sup>2</sup> is a methyl group. The substituted aryl group is not limited to those taught in paragraph [0031], and a phenyl group having multiple substituents is within the scope of the substituted aryl group.

With respect to claim embodiments in which one or both of m and n is 1 or 2, Matsuura et al. also teach that the compounds may have additional substituted or unsubstituted arylamino groups. For example, see paragraphs [0029], [0036] and [0040].

It would have been an obvious modification to one of ordinary skill in the art at the time of the invention to make compounds similar to those disclosed by Matsuura et al. and including other substituents disclosed and suggested in the prior art. For example, it would have been an obvious modification to one of ordinary skill in the art at the time of the invention to make compounds similar to EM128 having additional substituents such as substituted phenyl groups and/or diarylamino groups since Matsuura et al. teach that these groups may be used as substituents.



9. Claims 1-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parton et al. (US 2003/0129449 A1) as applied to claims 1, 3-5, 15, 21, 26-30, 32 and 33 above, and for the further reasons alone.

(Applicant is requested to note that because the Parton et al. publication is available as prior art under 102(a) as well as 102(e), a statement of common ownership at the time of the present invention will not be sufficient to overcome the rejection under 35 U.S.C. 103(a).)

Parton et al. do not disclose a specific example of a naphthalene compound represented by present formulae (1), (3) or (4) wherein at least one of p and w is 1-3, and at least one of R<sup>1</sup> and R<sup>2</sup> is a sterically bulky substituent. However, such compounds are within the scope of Parton's disclosure. Substituents which are sterically bulky substituents are explicitly taught by Parton et al. See paragraph [0050]. An alkyl group such as "t-butyl", which has a Sterimol B<sub>1</sub> value of 2.59 and is a substituent represented by present Formula (2a), is taught in paragraph [0050]. An aryl group such as "2,4,6-trimethylphenyl", also known as "mesityl", which has a Sterimol B<sub>1</sub> value of 1.93 and is a substituent represented by present Formula (2b), is taught in paragraph [0050].

It would have been an obvious modification to one of ordinary skill in the art at the time of the invention to make compounds similar to those disclosed by Parton et al. and including other substituents disclosed and suggested in the prior art. For example, it would have been an obvious modification to one of ordinary skill in the art at the time of the invention to make compounds similar to those disclosed in paragraph [0049] and having substituents such as t-butyl

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and/or 2,4,6-trimethylphenyl groups since Parton et al. teach that these groups may be used as substituents.

With respect to present claim 31, Parton et al. teach that the light-emitting layer may comprise a mixture of compounds and light emission can be of any color (see paragraph [0107]). It was well known in the art at the time of the invention that white light could be produced by selecting an appropriate combination of different light emitting materials to be combined in one layer, or an appropriate combination of different light emitting layers to be stacked upon one another.

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1-33 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-25 of U.S. Patent No. 6,849,345 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because there is substantial overlap between the subject matter of the patent claims and the claims of the present application in which, in Formula (1), one of m and n is 1 while the other is 0, 1 or 2, and each of p and w is 0-3. The sterically bulky substituent of the present claims is not required by the patent claims, but is not required for the present claims when both of p and w are 0. Further, the patent claim encompasses further substituents on the naphthalene compound, and sterically bulky substituents are not excluded by the patent claim language. Patent claim 7 explicitly provides for at least one alkyl or aryl group as a substituent on the naphthalene group of the formula (1) compound. It would have been within the level of ordinary skill of a worker in the art at the time of the invention to determine suitable alkyl and aryl groups. For an "aryl" group, one of ordinary skill in the art would have at once envisaged at least a phenyl group which, as taught on page 5 of the present specification, has a Sterimol B1 value of 1.70 angstroms.

12. The examiner notes that there are numerous other prior art references that anticipate at least present claim 1 wherein each of p, w, m and n is 0, and present claim 21 wherein each of p and w is 0. Rejections based on these references would be substantially duplicative of the rejection based on Enokida et al.

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13. Applicant is advised that should claim 16 be found allowable, claim 17 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

14. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY  
October 01, 2006



MARIE YAMNITZKY  
PRIMARY EXAMINER

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